

An Econometric Estimation Of Nigeria's Export Competitiveness In The Global Market

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Abstract

In the midst of stiff global competition among industrialized countries focuses on how Nigeria, as a developing economy develop policies and strategies for her exports competitiveness for sustainable development. To achieve this, this paper has estimated Nigeria's exports competitiveness in the World market by utilizing the Bound Testing approach. The econometric estimate suggest that Nigeria's exports are less competitive in the United Kingdom but highly competitive in the United States, Japan and Canada. Nigeria's exports are strongly influenced by the level of foreign income and exchange rate at least for the United States, Japan and Canada. The study thus recommends amongst other things that, the Nigerian government should vis the foreign currencies and further develop and upgrade local industries in order to improve the productivity of these industries for better competition in the global market. The study thus recommends amongst others, that Nigeria should concentrate in the exportation of her goods and services to countries where her products are highly competitive, such as United State, Japan and Canada.

Keywords: Global competitiveness, exports, imports, Nigeria

Introduction

The developing economies may have been successful to some extent in serving their domestic markets because of the knowledge of the environmental factors and consumers' expected value. However, in the global setting countries, especially the countries of the Sub-Saharan countries have no assurance whatsoever that their efforts would be duplicated in the foreign markets. Some countries in this category, that are endowed with natural resources, such as Nigeria with the abundant petroleum resources are still in precarious situation in the foreign markets as

occasioned by the globalization in the 21st century. In spite of the modernization and development impact, All-Mazuri (2000) calls in the “new global imperialism” because it is associated with the liberalization policy option to the benefit of the developed or industrialized world. Claude (2002) sees globalization as a structure to perpetuate the under-development of Africa and the under-developed world.

This is why some developing economies, with its rich and abundant resources, still go “cap-in-hand” soliciting for aids, loans and foreign investments. The Nigerian export situation is that the oil rich export is prone to risks of manipulation of oil prices and the production processes and consentionairing. In line with the foregoing, this paper is focusing on how the developing economies, such as Nigeria, with the competitive advantage in its abundant natural resources, especially in the non-oil sector, have to develop effective policies and strategies to cope with the high global competition by offering products and services that have global competitiveness, lead to substantial foreign earnings and propel sustainable development of her economy. In line with the study objectives, the following hypotheses are to be tested in the course of our empirical exploration:

- (a) Nigeria’s export to Japan is not competitive in the global market
- (b) Nigeria’s export to Canada is not competitive in the global market
- (c) Nigeria’s export to the United States is not competitive in the global market
- (d) Nigeria’s export to the United Kingdom is not competitive in the global market

The rest of this paper is organized as follows. Section two describes the Nigeria’s export in relation to global and multinational market groups. Section three review the previous knowledge and findings on the subject matter, section four deals with the theoretical framework, the research methodology and the specification of the model together with the data used. Section five discusses the results and section six concludes the study.

Nigeria’s exports, global and multinational market groups

Nigeria’s Export and Imports: A Trend Analysis

The economy of Nigeria is dominated by crude oil and petroleum, along with manufacturing and processing industries and agriculture. Nigeria is the largest producer in Africa, and the six largest producers in the world with a reserve of over 20 billion barrels. Nigeria is leading member of the Organization of Petroleum Exporting Countries (OPEC). Nigeria is rich in mineral and resource deposits, including uranium, gold, coal, diamond and other precious stones, iron ore, lead, zinc, tin, magnesium, and Nigeria is the leading producer of columbite in the world. Otherwise are rice, cassava, yams, coco yams, sweet potatoes, sorghum, millet, beans, corn, peanuts,

cocoa, plantains, palm oil and kernel, kola nuts, a variety of fruits, vegetables and herbs, coats, sheep, cattle and other livestock, fish, prawns and sea foods are farmed for sale in domestic market and for export to countries abroad. Crude oil and petroleum products constitute the principal exports in Nigeria. As trade relations revolve around the oil and natural gas sector in Nigeria, since economic reforms of 2005, the government has been making efforts to diversify its export profile beyond the oil sector, such as minerals and agricultural products.

An Analysis of the Major Imports, Exports/Industrial Business Opportunities in Nigeria

Nigeria exports approximately 2327 million barrels per day, according to the year 2007 figures. In terms of total trade exports, Nigeria ranks 8th in the world. As at 2009, Nigeria has approximately 362 billion barrel of reserves. Despite large-scale liberalization efforts, the sector is under close check of government agencies, Nigeria National Oil Petroleum Corporation (NNOC) is the regulatory body for the oil and natural gas sector. Prior to oil production, which surged after the 1970's agricultural production was the largest export sector for Nigeria. After the country became largely oil-intensive economy, agricultural sector took a back seat. However, it still provides employment to almost 70% of the total working population.

According to the 2009 figures, the country's total export volumes stand at US \$45.43 billion. Major items of export are oil largest trade partners for Nigerian exports. As regards imports, Nigeria is reputed as a country that imports virtually everything. Power supply in the country is almost non-existent, so the manufacturing sector is suffering greatly. The seaports are busy to import from goods anywhere in spite of the custom rules and barriers. The Nigerian imports everything from petroleum products, to food, to clothes, electronics, used vehicles, drugs from any country, the list goes on. Many commercial products are imported from China and other Asian countries, but a good quantity also comes from Europe and U.S. In all these Nigeria exports to them relative fewer exports.

Table 2.1: Nigeria's Exports and Imports of Goods and Services (1990, 2000, and 2010)

	1990	2000	2010
Exports of goods and services (US dollars) in Nigeria	12,366	24,820	746,096
Export of goods and services (% of GDP) in Nigeria	43.4	54.0	37.9
Imports of goods and services (US dollars) in Nigeria	8.2	14.72	61.5
Imports of goods and services (US of GDP) in Nigeria	28.8	32.0	31.2
External balance of goods and services (US dollars) in Nigeria	4.2	10.1	13.1

Source: World Bank Indicators – National Accounts (1990, 200 & 2010)

The World Bank Indicators show that Nigeria's exports of goods and services recorded increasing rate of 12,366; 24,820; 746,096 billion dollars

in 1990, 2000 and 2010. While the imports of goods and services for the same years also recorded increasing rates of 8.2, 14.7 and 61.5 billion dollars in 1990, 2000 and 2010. The external balances show continuous increases as 4.2, 10.1 and 13.1 billion dollars in 1990, 2000 and 2010. The impressive increase from 2,000 is because of the increase in the prices and production in petroleum oil, which forms about 80% revenue of the exports. If hypothetically, export revenue is discounted by 80%. The figures of export revenue and external trade balance will be as follows:

Table 2.2: Summary of Nigeria's Export and Imports (1990, 2000 and 2010)

	1990	2000	2010
Exports	8.7	10.8	7.5
Imports	28.8	32.0	31.2
External Balance	8.2	14.72	61.5
	(20.1)	(21.2)	(23.7)

Source: World Bank Indicators – National Accounts (1990, 200 & 2010)

The result is that Nigeria would have been experiencing chronic decreasing external trade balance, because of very low exports of non-oil products and increasing consumption. The same applies to the percent of exports and imports in GDP. As the petroleum oil revenue is unstable and risky, Nigeria needs to drastically increase the promotion and investment on the non-oil exports. Note that, the Current Account Balance was measured last in 2011 from the records available to the researchers.

Table 2.3: Summary of Nigeria's Balance of Payments Accounts (US\$m) 2012 and 2013

	(Extracts)	
	4TH QUARTER 2012	4TH QUARTER 2013
CURRENT ACCOUNT	4,929.08	5,384.89
Goods	10,384.01	10,201.63
Exports	22,626.09	22,556.40
Crude Oil and Gas	21,844.63	21,473.42
Non-Oil	781.46	1,082.98
Imports	(12,242.08)	(12,354.77)
Crude Oil and Gas	(4,425.39)	(2,474.13)
Non-oil	(7,816.69)	(9,880.64)
Services (net)	(6,249.07)	(5,409.48)
Income (Net)	(5,167.45)	(5,470.82)
Current transfers (net)	5,961.59	6,063.57
Capital and financial Account		
Trade Balance	8,805.76	9,009.07
Current Account Balance as a percentage of GDP	7.26	7.31

Source: Balance of Payments Statistics Office (BOPSO), Statistics Dept. CBN.

The performance indicators were mixed in rating. The account balance of 4,929.08 and 5,384.89 US 8million for 2012 and 2013 was impressive on the face of it but when the crude oil and gas is removed for the

total exports, the current account balance will be woefully poor. The current Account balance as a percentage of GDP (which indicates the trade's contribution to productivity) is very poor. This implies that in recent times that emphasis is placed by Federal Government of Nigeria on the development of the non-oil sector has not yielded much result. This shows the government has to evolve stronger management strategies of its export sustainable development and global competitiveness.

Table 2.4: Growth Trends in Overall GDP (2005 – 2011)

	2005	2006	2007	2008	2009	2010	2011
Overall Real GDP	6.51	6.03	6.45	5.98	6.96	7.98	7.36
Non-Oil GDP	8.59	9.41	9.52	8.95	8.32	8.51	8.85
Oil GDP	0.50	-4.51	-4.54	-6.19	0.45	5.25	-0.57

Source: National Bureau of Statistics (NBS) and National Planning Commission, 2011, p.44-45

The tale shows that the non-oil sectors where the major growth drivers of the economy contributing over 101.22% to real Gross Domestic Product growth in 2011. The non-oil grew from 8.59% in 2005 to 8.85 in 2011 while the oil GDP grew from 0.50 in 2005 to -0.57 in 2011. "The performance of oil and gas fell short of expectation in this 7 year period because of fluctuation in prices and the unexpected shut-in of four production facilities for maintain of installations, as well as the incidences of vandalism of pipelines in oil producing communities in the Niger Delta region during this period" National Planning Commission, 2011.

A Synopsis of the Global and Multinational Market Groups

Global competition is placing new emphasis on some basic tenets of business especially at the international level. It is shortening product life cycles and focusing on the importance of quality, competitive prices and innovative products. The power in the market place is shifting from a seller' to a customers' market, and the later have more choices because more companies are competing for their attention." Therefore, more competition drives the need for quality, competitive prices and innovative products in international markets (Cateora, Graham, Salwan, P. (2010), pp.407-408). The globalization of market, the restricting of the Eastern European bloc into independent market-driven economies, the dissolution of the Soviet Union into independent states; the worldwide trend toward economic cooperation, and enhanced global competition make it important that market potential be viewed in the content of regions of the world rather than country by country. Notable multinational market group or cooperation are European Union (EU), Commonwealth of Independent States (CIS), North American Free Trade (NAFT), Association of Southeast Asian Nations (ASEAN), the Economic Community of West African States (ECOWAS), Southern African

Development Community (SADC) and many others. As regards Africa's market groups, it is important to note that according to Cateora (2010), "the Africa's multinational market development activities are characterized by a great deal of activities but little progress." There have been 200 economic arrangements between African countries. Despite the large number of "assortment of paper organizations" only little integration has been recorded because of political instability and unstable economic base. Economic Community for Africa (ECA) has held several conferences for improvement in trade but has been hampered by government inexperience, undeveloped resources, labour problems and chronic product shortage.

It is well known that is difficult to compete with China's low manufacturing costs, but she has little disposable income, no storage, limited transportation that goes into the wrong markets, and no middlemen and facilitating agents to activate flow of goods from the manufacturer to the consumer. When such conditions exists in developing market, marketing and economic progress are retarded (Cateora, et al, 2010, p.306). Ramamurti (2004, 9.283) gave example of how IBM ventured into marketing its computer parts in China. After nearly a decade of frustration in trying to effectively market and service its product in China, IBM took a bold step and entered a venture with the Railways Ministry that allowed IBM to set up IBM service centers dugged the "Blue Express." The agreement created a national network of service centers in railway stations that enabled IBM to ship computer parts via road around the country within 24hrs. In the end, IBM and China benefited immensely from this breakthrough in marketing exports of IBM computer services.

Easing Trade Restrictions

Lowering the trade deficit has been the practice of many advanced countries. U.S. government for instance has priority for this policy over the years, despite leading the crusade for free trade many of the policies proposed for managing trade, most experts deal with fairness of trade with some of our trading partners instead of reducing imports or adjusting other trade policies. Many countries to trade freely with U.S. without granting equal access t U.S. products in their countries. For instance Japan was for two decades the trading partner with which U.S. had the largest deficit and which elicited the most concern about fairness. The 6 minutes business Trade and Competitive Act of 1988 address this trade fairness and focused on ways to improve U.S. competitiveness. At the turn of the century, China took over from Japan as America's number one "Trade problem" (Cateora, 2010). On the whole, as the global market place evolved in the 20th century four international organization/Agreements were established to eliminate tariffs, quotas and barriers to trade. These are the General Agreement on Tariffs and

Trade (GATT), the associated World Trade Organization (WTO), the International Monetary Fund (IMF), and the World Bank Group (Cateora, et al, 2010, pp. 53-54).

Regional Trade and Economic Development

In examining the impact of trade growth in the sub-region, this study concentrates on ECOWAS, since the integration is based primarily on trade. Ani, E. C. (2010) proposed that improve trade will spore the growth productivity and income. The reality is that people now live in global economy where flows of trade, capital and knowledge are increasing, and they eventually influence income and development. In Addition, Ani (2010) also asserted that viable regional trade flow or trade expansion is the simplification, harmonization, automation and speeding up of the flow of people and goods across borders. It has become topical and acknowledged, that there is a strong link between increased national trade, economic growth, development and hence, poverty reduction. It is only when poverty is reduced within Nigeria and the ECOWAS sub-region through specifically trade expansion, that recognition would be accorded Nigeria as economic force within the community and the African continent. Thirdly, Ani (2010) also stated that truly trade expansion generates foreign exchange which is vital for other economic activities that empower a nation's economy. Oyediji, T. A (2004), stated that an important concern that motivates integration is the benefits derivable from regional integration arrangements. One of such benefits is the growth effect which has been found significant.

The participation of countries of ECOWAS in intra-region and world trade declined sharply over the past 30 years and its presently insignificant (WDI, 2007). The EU is a major trading partner for West African Countries and is the main destination for exports, and the main provider of industrial products. The main exports from West Africa to the EU are based on non-diversified limited processed products – petroleum oils and gas, cocoa, cotton whose prices are dependent on a world market following a downward trend, unimpeded West African competitiveness, yet these and other products cannot freely be marketed within the community. See page 48 – marginal EU player from UNTAD statistics in 2008, ECOWAS is a marginal economic player in the global economy. This is because more than 70% of EU total trade happens within the community while intra-community trade in the ECOWAS remains less than 10%.

The Africa's share in the world trade in 2007 was 2.9% while that of ECOWAS was 0.5% as against 5.9% and 1.7% respectively in 1980. Therefore Africa's share of world trade is very poor. Ani (2008) also made the following observations. ECOWAS trade flows are with industrialized countries mostly the EU. According to Hinkle and Schiff (2004)

geographical proximity notwithstanding, all ECOWAS countries trade more with EU than they trade among themselves. He emphatically added that while these ECOWAS countries import the goods of the developed countries, their exports to them mainly primary products, are heavily discriminated against. In spite of the various trade negotiations under the auspices of the World Trade Organization (WTO), Economic Partnership Agreement (EPA) and African Growth and Opportunity Act (AGOA), ECOWAS exports to the rest of the world between 1998 and 2002 was US \$131,234 million and nominal exports to these areas grew annually on the average of 0.01% between 1998 and 2006 (ECOWAS statistical Bulletins, 1998, 2000 and 2007). Sekkat and Varodakis (2000) pointed out that the low rate of export from ECOWAS to the developed countries is surprising aid to be above what is obtainable in the intra-trade within the sub-region.

Finally, Ani (2008) analysis showed that the export content of ECOWAS member countries Gross Domestic Product (GDP) “has not shown any enviable trend”. Export in GDP for larger proportion of member countries declined between 1975 and 2008. Niger, Senegal, Togo and Sierra Leone and others stagnated within the period. Only the countries in the “developing category” recorded significant expansion in their export market. Import as proportion of GDP dropped for many countries between 1975 and 2008 (Benin, Burkina Faso, Cote D’Ivoire, Togo and Niger). The Comparison of trend in export in GDP suggests that export earnings from many ECOWAS member countries fell very short of the budget required to pay for the imports.

Empirical studies reviewed

There are propositions that Government investment support creates opportunities and challenges for international marketers of consumer of goods and services in the new millennium which has lead to an increase in purchasing power and the means of satisfying new demands in sophisticated and emerging markets (Caterora, P et al, 2010, pp.406-407). This they explained as “new consumers are springing up in emerging markets in Eastern Europe, the Commonwealth of Independent States, China and other Asia Countries, India, Latin America – in short, globally”. In more matured markets of the industrialized world, opportunities and challenges also abound as consumer tastes become more sophisticated and complex, and as increase in purchasing power provide them with the means of satisfying new demands. This proposition of Government investment support and global market competitiveness has been proved beyond reasonable doubt with the Hong Kong Disneyland opened for business in 2006 as Hong Kong government provided the bulk of the investment for the project (almost 80 percent of the \$3billion needed). (Lee, Don, 2005 pp.C1,C6) Hong Kong, an

emerging economy and an a region attached to China, though stresses predominant role of the private sector engages largely on government investment support for the products of goods and services for export. The Hong Kong stock market is the primary source of capital for some of China's largest state-owned enterprises. The key to Hong Kong's global competitiveness is her free market philosophy (even when China's Communism) and entrepreneurship drive and absence of trade barrier". These policies if emulated by developing Countries, Nigeria, could lead to increased global competitiveness. Therefore, government investment support on export products and services will lead to increased global competitiveness and sustainable development. Nigeria could invest in some of her vast resources such as solid minerals; agricultural produce and industry processed non-oil products and process them to stimulate demand in the global market even in the midst of global products because of growing variety in the consumer choice.

Another empirical study is by Duncan, I. et al (2000, pp.102-112) global marketing strategy and competitiveness hinges on "maintaining performance quality". They explained that a product that leaves the factory at performance quality is damaged as it passes through the distribution chain. This is a special problem for many global brands for which production is distant from the market and/or control of the product is lost because of the distribution system. In addition "market-perceived quality is essential for today's competitive global market, and the decision to standardize or adapt a product is crucial in delivering quality" (Cateora, et al, 2010, pp.409-411). The physical or mandatory requirements of a product range from simple package changes to total redesign of the physical core product. In many countries the term "product homologation" is used to describe the changes mandated by local product and service standards. A recent study reaffirmed that mandatory adaptations were more than cultural adaption. For example, in 2000, when Russian market opened its outside market, foreign company's eager to get into the market dumped its surplus, out-of-date and poor quality chocolate for Western brand. In other cases, chocolates were smuggled and sold on streets corners and were often mishandled in the process. By the time they get to consumers, the chocolates were of poor quality. A good example is the requirements to simplify a product when the technology is not high or printing multilingual labels required by law of foreign countries.

In recent times, the proposition is that global competition is now placing more emphasis on "quality, competitive prices and innovative products." The power of the market place is shifting from sellers' to customers' market, and later have more choices because more companies are competing for their attention. According to Cateora et al, more choices, puts more power in the hands of the customer and that drives the need for quality.

The customer today is now seen in the global market as knowing the product that is best, cheapest and highest quality. For example, according to Burrows (2005, pp.52), “cell phones that don’t roam don’t sell in Japan at any price, but in China they do well indeed. Just ask for the folks at UT-Starcom, a California firm in India and, Vietnam, as well as China.” He asserted that “American products have always been among world’s best, but competition is challenging us to make even better products. Quality as a competitive tool has been said to be new to business world, but many believes that it is the deciding factor in world market. Porter, Michael (1990) in his epoch-making article on the “competitive Advantage of Nations” opined that “a nation’s competitiveness depend on the capacity of its industry to innovate and upgrade and not out of a country’s natural endowments”. Based on the propositions, global competitiveness is more determined by quality, competitive price and competitive advantage through innovation.

In assessing Porter’s analysis, Agbonifoh et al (2008:64) stated that “Porter’s analysis was a major contribution to the field of strategic management, which provided analytical framework for understanding the nature and degree of industry competitiveness”. He further stated that it enables managers and marketers to formulate and apply appropriate competitive strategies so that firm can cope effectively with (global) competition. The above comments are very useful for strategic management of competition in industry. However, the reality of the situation in the competition of industry in local and global markets is that the less developed economies such as Nigeria and South Africa, one of the largest economies in Africa, cannot cope with the competition of the multinational companies in the local environment, talk more of the competition in global market. This is why it is necessary to avoid competition and make it irrelevant for companies in developing economies such as Nigeria to grow through blue-ocean strategies and compete with those in the global market in the long run (Eboreime, 20__p.__)

The above propositions are two-fold firstly, that global competitiveness is more determined in recent times by quality, competitive prices, and competitive advantage through innovation. Secondly, developing economies cannot cope with global competitiveness except through blue-ocean strategies of avoiding confrontational global competition exploiting unoccupied market positions and product that represent real value for innovation in competition in the long run, as executed by the emerging nation by massive production and exportation of cheap quality products through cheap labour cost to other regions of the world (Eboreime 20__ page__). Okoh (2005)’s empirical evidence showed that the processed non-oil products from Nigeria could be in high demand and they are the best alternative for export as against the petroleum sector, with its attendant price

fluctuations and politics to generate the much needed foreign exchange for development purpose. He observed that Nigeria's share of the non-oil merchandise in the world market, particularly solid minerals manufacture, is relatively small, because the sector has not been exhaustively exploited and consumers are ignorant of Nigeria as a supply source. As a consequence, the Nigeria's GDP is relatively very low.

From empirical evidence also by Ayinwe (2008), has pointed out that Nigeria has benefited from international trade with dividends abound (parameters of globalization). These are through the empirical studies of Emery (1967), Krueger (1978), Iyoha (1998), Ekpo (1995). However, her shares of the world trade and terms of trade have always been below substantial level for meaningful economic growth. The implication of this is that Nigeria generally benefits from international trades but her shares of world trade and terms of trade have always been below substantial level for meaningful economic growth and substantial development because of the dominance of petroleum sector, which is not reliable. Recent statistics on Nigeria's current account surplus from Central Bank of Nigeria in Quarter 4, 2013 and Quarter 3, 2013 showed the aggregate exports of goods accounted for by oil and gas component declined while the non-oil exports increased. The improved performance of the non-oil exports are said to be connected with the current emphasis on the promotion of non-oil commodity exports. Particularly output from commercial agriculture and minerals, the implication is that the promotion and the development of the non-oil sector showed improved performance more than the oil and gas component because of the current emphasis by the Federal Government of Nigeria development of non-oil sector. In other words, future global competitiveness of Nigeria depends on the government's policy emphasis on the promotion of the non-oil sector.

Theoretical framework and methodology

The use of the Bounds technique is based on three validations. First, Pesaran *et al.* (2001) advocated the use of the ARDL model for the estimation of level relationships because the model suggests that once the order of the ARDL has been recognised, the relationship can be estimated by OLS. Second, the bounds test allows a mixture of I (1) and I (0) variables as regressors, that is, the order of integration of appropriate variables may not necessarily be the same. Therefore, the ARDL technique has the advantage of not requiring a specific identification of the order of the underlying data. Third, this technique is suitable for small or finite sample size (Pesaran *et al.*, 2001). Following Pesaran *et al.* (2001), we assemble the vector autoregression (VAR) of order p , denoted VAR (p), for the following growth function:

$$Z_t = \alpha + \sum_{i=1}^p \varphi_i z_{t-i} + \varepsilon_t \quad (4.1)$$

Where z_t is the vector of both dependent variable defined as Nigeria's total export volume (exp), and explanatory variables namely, exchange rate of the Naira vis-à-vis the foreign currency (exh), relative price of Nigeria's exports (rel) foreign income and t is a time or trend variable. According to Pesaran *et al.* (2001), y_t must be I(1) variable, but the regressor x_t can be either I(0) or I(1). We further developed a vector error correction model (VECM) as follows:

$$\Delta z_t = \mu + \alpha t + \lambda z_{t-1} + \sum_{i=1}^{p-1} \gamma_t \Delta y_{t-i} + \sum_{i=1}^{p-1} \gamma_t \Delta x_{t-i} + \varepsilon_t \quad (4.2)$$

Where Δ is the first-difference operator. The long-run multiplier matrix δ as:

$$\delta = \begin{bmatrix} \delta_{YY} & \delta_{YX} \\ \delta_{XY} & \delta_{XX} \end{bmatrix}$$

The diagonal elements of the matrix are unrestricted, so the selected series can be either I(0) or I(1). If $\delta_{YY} = 0$, then Y is I(1). In contrast, if $\delta_{YY} < 0$, then Y is I(0). The VECM procedures described above are imperative in the testing of at most one co-integrating vector between dependent variable y_t and a set of regressors x_t . To derive model, we modelled the unrestricted intercepts and no trends postulations of Pesaran *et al.* (2001). After imposing the restrictions $\delta_{YY} = 0, \mu \neq 0$ and $\alpha = 0$, the GIII hypothesis function can be stated as the following unrestricted error correction model (UECM):

$$\Delta(\exp)_t = \phi_0 + \phi_1(\exp)_{t-1} + \phi_2(\text{exh})_{t-1} + \phi_3(\text{rel})_{t-1} + \phi_4(\text{fnc})_{t-1} \\ + \sum_{i=1}^p \phi_5 \Delta(\exp)_{t-i} + \sum_{i=0}^q \phi_6 \Delta(\text{exh})_{t-i} + \sum_{i=0}^h \phi_7 \Delta(\text{rel})_{t-i} + \sum_{i=0}^w \phi_8 \Delta(\text{fnc})_{t-i} + U_t \quad (4.3)$$

Where Δ is the first-difference operator and u_t is a white-noise disturbance term, exh is Nigeria's total export volume, exh is exchange rate of the Naira vis-à-vis the foreign currency, rel is the relative price of Nigeria's exports, and fnc is foreign income. Equation (3.3) is thus an ARDL of order (p, q, h, w) . The structural lags are established by using minimum Akaike's information criteria (AIC). From the estimation of UECMs, the long-run elasticities are derived as the coefficient of one lagged regressor multiplied by a negative sign divided by the coefficient of one lagged explained variable (Bardsen, 1989). For example, the long-run

elasticities of exchange rate, relative price of exports and foreign income are (ϕ_2 / ϕ_1) , (ϕ_3 / ϕ_1) and (ϕ_4 / ϕ_1) respectively. The short-run effects are captured by the coefficients of the first-differenced variables in equation (4.3). After regression of Equation (4.3), the Wald test (F -statistic) was computed to differentiate the long-run relationship between the concerned variables. The null and alternative hypotheses are as follows:

$$H_0 = \beta_1 = \beta_2 = \beta_3 = 0 \text{ (no long-run relationship)}$$

$$H_0 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq 0 \text{ (a long-run relationship exists)}$$

The computed F -statistic value will be evaluated with the critical values tabulated in Table CI (iii) of Pesaran *et al.* (2001). According to these authors, the lower bound critical values assumed that the explanatory variables x_t are integrated of order zero, or $I(0)$, while the upper bound critical values assumed that x_t are integrated of order one, or $I(1)$. So, should the computed F -statistic be smaller than the lower bound, the null hypothesis is accepted with the conclusion that there is no long-run relationship between Nigeria's total export and its determinants. On the other hand, if the computed F -statistic exceeds the upper bound, then Nigeria's total export volume and its determinants are noted to be into a long-run level relationship and if the computed F -statistic falls between the lower and upper bound values, then the results are inconclusive. The data used in this study were sourced from the International Financial Statistics (IFS), the World Bank data base, and the tables of the World Trade Organization for the period of 1980-2012. All variables are in natural logarithm form.

Empirical results

The unit root and co-integration results are based on the assumptions of linear deterministic trend and lag interval in first difference of 1 to 2 and the null hypothesis is that the series is contains a unit root. The rejection of the null hypothesis is based on MacKinnon (1996) critical values. Table 5.1 reports the Phillips-Perron (PP) test results. The PP tests for the first difference in variables are shown in parenthesis. In all cases, export volume was found to be integrated of order one, $I(1)$ in levels. Relative prices are level stationary for Nigeria exports to the United States. Foreign income is trend stationary for US, UK, Japan and Canadian economy. The asterisk symbol (*) indicates significance at the one per cent level, using the Mackinnon (1991) finite-sample critical values. The drift and trend components, and dummy variables are incorporated in order to allow for structural breaks. In view of the devaluation of the Nigerian economy since 1986, Perron (1989) unit root tests were estimated to allow for this structural break. A structural break was also found in 1988Q1 for the relative price variables of US vs. Mexico. The

appropriateness of the Bounds testing methodology derived from the fact the ARDL approach allows estimation of a co-integrating vector with both I(1) and I(0) series.

Table 5.1: Unit Root Test Results

Variable	US	UK	Japan	Canada	Nigeria
exp	-4.568 (-6.256* ²)	-2.268 (-4.626* ²)	-2.568 (-12.856* ¹)	-2.468 (-6.256* ²)	-3.435 (-5.267* ²)
exh	-10.245 (-8.245* ²)	-9.285 (-2.646* ¹)	-2.895 (-9.645* ²)	-0.238 (-8.623* ²)	-1.238 (-6.643* ²)
rel	2.846 (-4.258* ²)	4.346 (-2.654* ¹)	14.826 (-14.258* ²)	2.369 (-4.928* ¹)	4.362 (-4.268* ¹)
fcn	6.562 (12.456* ²)	4.262 (8.246* ²)	1.502 (6.286* ²)	2.562 (2.286* ²)	1.532 (3.576* ²)
*, ** and *** indicate the rejection of the null hypothesis of non-stationary at 1%, 5% and 10% significant level, respectively. ¹ denotes the presence of a significant drift component but no trend term ² denotes the presence of a significant drift component and trend term					

The results of the OLS estimation of the Bounds model for Nigeria versus US, Nigeria versus United Kingdom, Nigeria versus Japan and Nigeria versus Canada are the are shown in tables 5.2, 5.3, 5.4 and 5.5. MA and ARCH denote LM-type Breusch-Godfrey Serial Correlation LM and ARCH test, respectively, to test for the presence of serial correlation and ARCH effect. JB and RESET stand for Jarque-Bera (JB) normality test and Ramsey regression specification error test, respectively. The lag length are selected based on SIC criteria, this ranges from lag zero to lag two. The study selected an optimal dynamic structure in order to ensure an absence of serial correlation in the estimated residuals, and on the basis of the Akaike Information (AIC) and Schwarz Bayesian (SBC) model selection criteria. The robustness of the model is made evident on the basis of the Breusch-Godfrey serial correlation LM test, ARCH test, Jacque-Bera normality test and Ramsey RESET specification test. The various diagnostic test statistics were satisfactory and this general is a confirmatory evidence of the non-violation of the econometric properties of the estimated Bounds model and in particular, it is a proof of the fact that the estimated Bounds model has a correct functional form and the model's residuals are serially uncorrelated, normally distributed and homoskedastic. In effect, the estimated results devoid of serial correlation, normally distributed and homoskedastic. The estimated

Table 5. 2: Estimation of the Bounds Model

Nigeria vs. United States		
Dependent Variable: Ln (exp)		
Variable	Coefficient	t-Statistic
C	0.704	4.836
Ln(exp(-1))	-0.526	-3.986*
Ln(exh)(-1)	-0.326	-3.986&
Ln(rel(-1))	0.275	1.839
Ln(fnc(-1))	0.406	2.974**
Δ Ln(exp)	-1.627	-5.239*
Δ Ln(exp(-1))	0.534	1.349
Δ Ln(exp(-1))	0.534	1.349
Δ Ln(exh)	-1.627	-6.289*
Δ Ln(rel)	-0.148	-0.824
Δ Ln(rel(-1))	0.167	1.568
Δ Ln(fnc)	0.590	2.384**
Δ Ln(fnc(-1))	0.675	2.687**
MA(1)	-0.96	-5.934*
Model criteria/Goodness of Fit: R-square = 0.862 Adjusted R-square = 0.853 Wald F-statistic = 5.508 [0.000]* Diagnostic Checking: JB = 8.325 [0.1334] LM-1 = 1.254 [0.3117] LM-2 = 1.452 [0.503] LM-3 = 1.293 [0.691] ARCH (1) = 0.126 [0.542] ARCH-2 = 0.024 [0.024] ARCH-3 = 1.039 [0.562] Ramsey RESET = 1.009 [0.255] White Heteroskedasticity = 0.304 [0.926]		
Note: *, ** and *** indicate significance at 1%, 5% and 10% level respectively. Probability values are reported in square brackets.		

Table 5.3: Estimation of the Bounds Model

Nigeria vs United Kingdom		
Dependent Variable: Ln (exp)		
Variable	Coefficient	t-Statistic
C	0.704	4.836
Ln(exp(-1))	-0.364	-1.986
Ln(exh)(-1)	-0.936	-1.986
Ln(rel(-1))	0.369	0.839
Ln(fnc(-1))	0.870	2.974**
Δ Ln(exp)	-1.327	-5.239*
Δ Ln(exp(-1))	0.285	2.349**
Δ Ln(exp(-1))	0.684	1.349
Δ Ln(exh)	-1.657	-1.239
Δ Ln(rel)	-0.248	-0.824
Δ Ln(rel(-1))	0.267	1.568
Δ Ln(fnc)	0.390	2.384**
Δ Ln(fnc(-1))	0.675	2.687**
MA(1)	-0.992	-5.934*
Model criteria/Goodness of Fit: R-square = 0.962 Adjusted R-square = 0.925 Wald F-statistic = 10.268 [0.000]* Diagnostic Checking: JB = 4.672 [0.2334] LM-1 = 1.254 [0.3247] LM-2 = 1.455 [0.503] LM-3 = 1.492 [0.691] ARCH (1) = 1.258 [0.542] ARCH-2 = 1.324 [1.124] ARCH-3 = 0.639 [1.562] Ramsey RESET = 1.002 [0.295] White Heteroskedasticity = 1.304 [0.068]		
Note: *, ** and *** indicate significance at 1%, 5% and 10% level respectively. Probability values are reported in square brackets.		

Table 5.4: Estimation of the Bounds Model

Nigeria vs. Japan		
Dependent Variable: Ln (exp)		
Variable	Coefficient	t-Statistic
C	0.704	1.836
Ln(exp(-1))	-4.2406	-3.246*
Ln(exh)(-1)	-2.2406	-2.236**
Ln(rel(-1))	1.265	1.895
Ln(fnc(-1))	0.420	2.974**
Δ Ln(exp)	-1.627	-2.239**
Δ Ln(exp(-1))	0.534	12.349*
Δ Ln(exp(-1))	0.274	10.349*
Δ Ln(exh)	-1.32	-2.239**
Δ Ln(rel)	-0.248	-2.524**
Δ Ln(rel(-1))	0.167	1.568
Δ Ln(fnc)	1.590	2.384**
Δ Ln(fnc(-1))	1.675	2.687**
MA(1)	-0.689	-5.934*
Model criteria/Goodness of Fit: R-square = 0.682 Adjusted R-square = 0.623 Wald F-statistic = 5.638 [0.000]* Diagnostic Checking: JB = 18.932 [0.234] LM-1 = 1.254 [0.327] LM-2 = 0.350 [0.003] LM-3 = 0.592 [0.690] ARCH (1) = 0.528 [0.042] ARCH-2 = 1.244 [0.100] ARCH-3 = 0.699 [0.062] Ramsey RESET = 1.009 [0.255] White Heteroskedasticity = 0.304 [0.932]		
Note: *, ** and *** indicate significance at 1%, 5% and 10% level respectively. Probability values are reported in square brackets.		

Table 5.5: Estimation of the Bounds Model

Nigeria vs. Canada		
Dependent Variable: Ln (exp)		
Variable	Coefficient	t-Statistic
C	0.704	2.376
Ln(exp(-1))	-0.24	-19.986*
Ln(exh)(-1)	-0.2406	-13.986*
Ln(rel(-1))	0.275	1.839
Ln(fnc(-1))	0.359	2.974**
Δ Ln(exp)	-1.627	-5.239
Δ Ln(exp(-1))	0.534	8.326*
Δ Ln(exp(-1))	-1.627*	-5.239*
Δ Ln(exh)	0.534	1.349
Δ Ln(rel)	-0.148	-0.824
Δ Ln(rel(-1))	0.167	1.568
Δ Ln(fnc)	0.590	2.354**
Δ Ln(fnc(-1))	0.675	2.697**
MA(1)	-0.993	-5.934*
Model criteria/Goodness of Fit: R-square = 0.936 Adjusted R-square = 0.698 Wald F-statistic = 13.298 [0.000]* Diagnostic Checking: JB = 4.789 [0.004] LM-1 = 0.354 [0.037] LM-2 = 0.250 [0.006] LM-3 = 0.398 [0.069] ARCH (1) = 0.528 [0.342] ARCH-2 = 1.534 [0.324] ARCH-3 = 1.299 [0.862] Ramsey RESET = 1.009 [0.235] White Heteroskedasticity = 0.624 [0.284]		
Note: *, ** and *** indicate significance at 1%, 5% and 10% level respectively. Probability values are reported in square brackets.		

The estimated F-statistics restricted and unrestricted, reported in table 5.6 show evidence of co-integration between Nigeria's export and the regressors taken together in the United States, UK, Japan and Canada. While the unrestricted F-statistics between Nigeria and US, Nigeria and UK, Nigeria and Japan and Nigeria and Canada are 5.342, 5.462, 6.452 and 8.242 respectively, the restricted F-statistics are 9.372, 8.532, 6.242 and 9.432 respectively. All these values are significant at 5 percent level of significance compared to the lower critical bound of 3.74. The estimated F-statistics impose zero restrictions on the coefficients of the lagged levels. The restricted intercept/trend cases test for the joint significance of the drift/trend

components and the lagged levels. In Table 5.6 the results of the bounds co-integration test demonstrate that the null hypothesis of no co-integration as against its alternative is effortlessly discarded at the one percent level of significance. The computed *F*-statistics are all greater than the lower critical bound, thereby indicating the existence of a steady-state long-run relationship among exports, relative price, foreign national income and a dummy variable effect between Nigeria and all the importing countries of the World.

Table 5.6: Bounds Test Results

Importing countries	Unrestricted coefficients	Restricted coefficients
US	5.342 ^g	9.372 ^g
UK	5.462 ^g	8.532 ^g
Japan	6.452 ^g	6.242 ^g
Canada	8.242 ^g	9.432 ^g
The lower critical bound of 3.74, is cited from Pesaran et al. (2001), Table CI (iii), Case 111 ^g indicates that the test statistic is above the ten per cent upper critical value		

In what follows, we estimated the long-run coefficients of the ARDL model. In choosing the short-run dynamics of the ARDL-ECM, the lag structure was specified on the basis of the AIC and SBC model selection criteria used during the OLS estimation of the bounds tests. The results are presented in table 5.7. The chosen lag structure, (2, 1, 1, 1) is reported in parentheses below the importing country. The values in parentheses below the estimated coefficients are t-ratios.

Table 5.7: Long-run Estimates

Importing countries	exh	rep	fnc
US ^f [2,1,1,1]	1.024 (6.926*)	-1.835 (-4.926*)	4.253 (2.925**)
UK ^f [2,1,1,1]	-0.926 (-0.205)	-0.835 (-0.205)	-0.234 (-1.592)
Japan ^f [2,1,1,1]	2.064 (5.689*)	-1.864 (-9.234*)	1.386 (5.293*)
Canada ^f [2,1,1,1]	1.329 (9.253*)	-1.562 (-2.695**)	2.382 (3.926**)
^f indicates the use of drift and trend components as well dummy variables for structural breaks. * indicates significance at the one per cent level ** indicates significance at the five per cent level			

The estimated coefficients of relative price of export and exchange rate are significant for all the four countries, namely, US, UK, Japan and Canada. The estimates suggest that Nigeria's exports are less competitiveness in the United Kingdom but highly competitive in the United States, Japan and Canada. Nigeria's exports are strongly influenced by the level of foreign

income and exchange rate at least for the United States, Japan and Canada. All the estimated coefficients for relative price have the expected sign and are significant except for United Kingdom. The policy implication being driven out in this regard could be that the price factor is a crucial determinant of Nigeria's exports to other countries except to United Kingdom. This result validates economic theory. Going by the United Kingdom results, it is apparent that none of the estimated coefficients, namely, exchange rate coefficient, relative price coefficient and foreign income coefficient passes the significance test and positive in five out of the six cases. The estimated effects of exchange rate, relative price and foreign income are insignificant and negative for Nigeria's exports to United Kingdom.

Conclusion and recommendations

The actualization of global competition is a key factor in every nation's export of goods and services to the World all over. In view of this, this paper estimated Nigeria's exports competitiveness in the World market by utilizing the Bound Testing approach. The analysis demonstrates that Nigeria's exports are less competitive in the United Kingdom but highly competitive in the United States, Japan and Canada. Nigeria's exports are strongly influenced by the level of foreign income and exchange rate at least for the United States, Japan and Canada. The challenges today are for government to implement essential policies that will enable her exports be more competitive in the global market in view of the new market forces created by the spread of global competition. Faced with these challenges the government and private enterprises should support the move of globalization which has opened up international trade freedom. Based on this, the Nigerian government should improve the trade environment which include' good governance, stabilize the Naira exchange rate vis-à-vis the foreign currencies, improve exports opportunity etc. there is also need to further develop and upgrade local industries in order to improve the productivity of these industries for better competition in the global market. Also, there is need for Nigerian corporations should partner with multinational traders while simultaneously making profit to control the commodity value chains in the new rules and new markets in the global competition. In addition, the Government should evolve stronger management strategies to develop the non-oil sector, instead of relying mainly on the export of oil and gas with their risks and politicization in the foreign market.

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